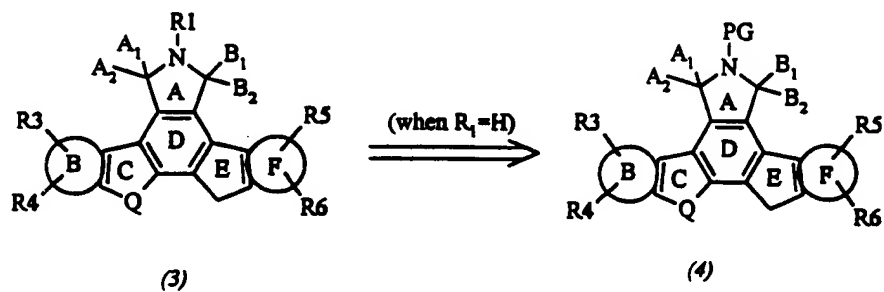


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Figure 1.



PG = Protecting Group
 or
 Polymeric Support

Figure 2.

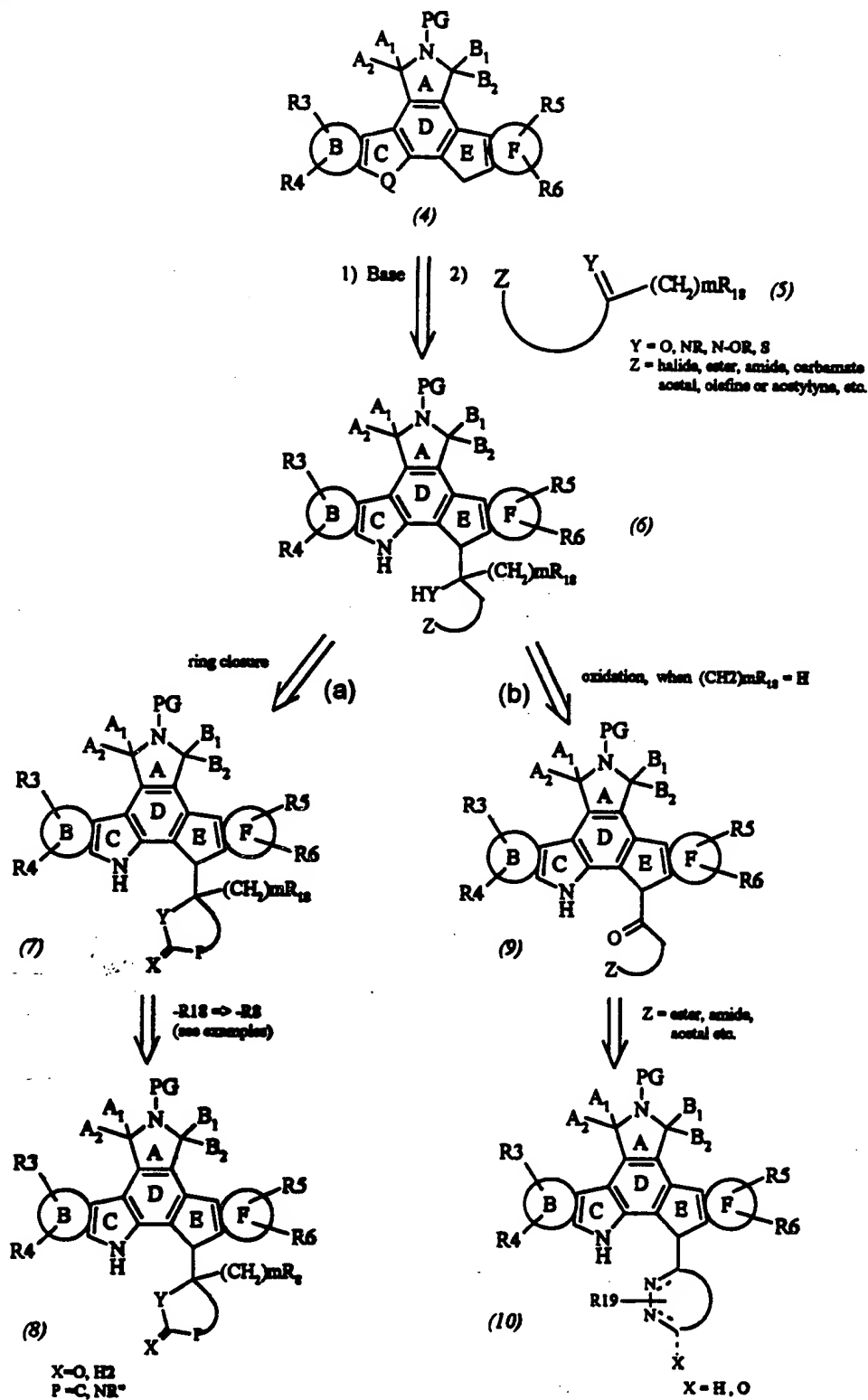


Figure 3. Preparation of Cyclic Substituents via Intra-molecular Dipolar Cycloaddition

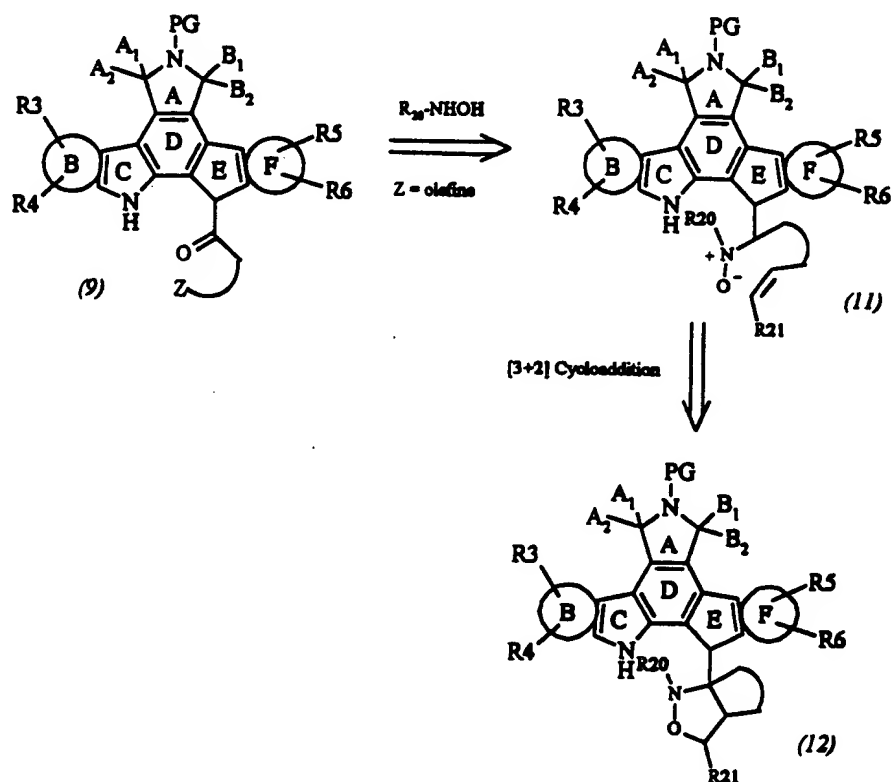


Figure 4. Preparation of Cyclic Substituents via Intra-molecular Dipolar Cycloaddition

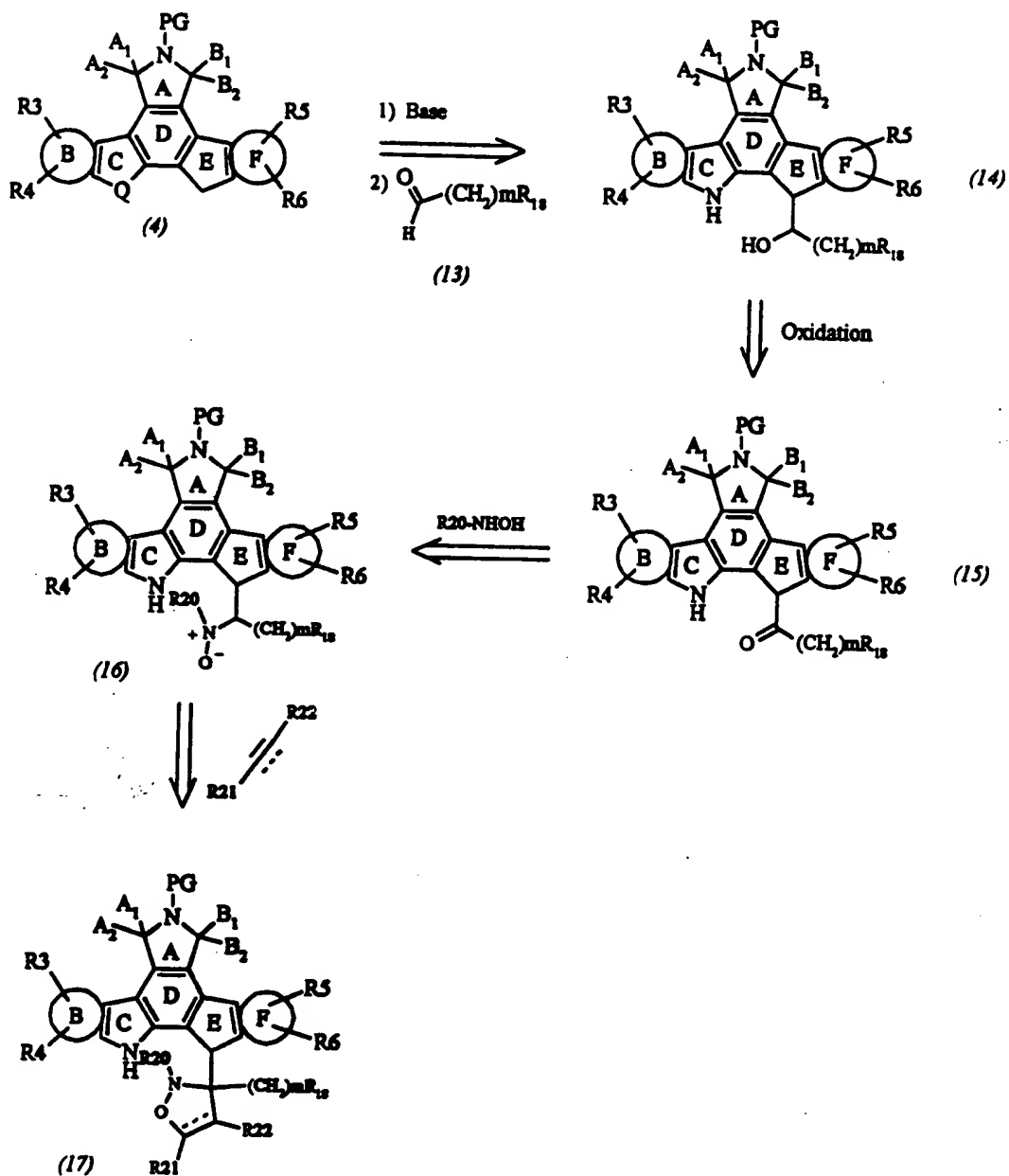


Figure 5.

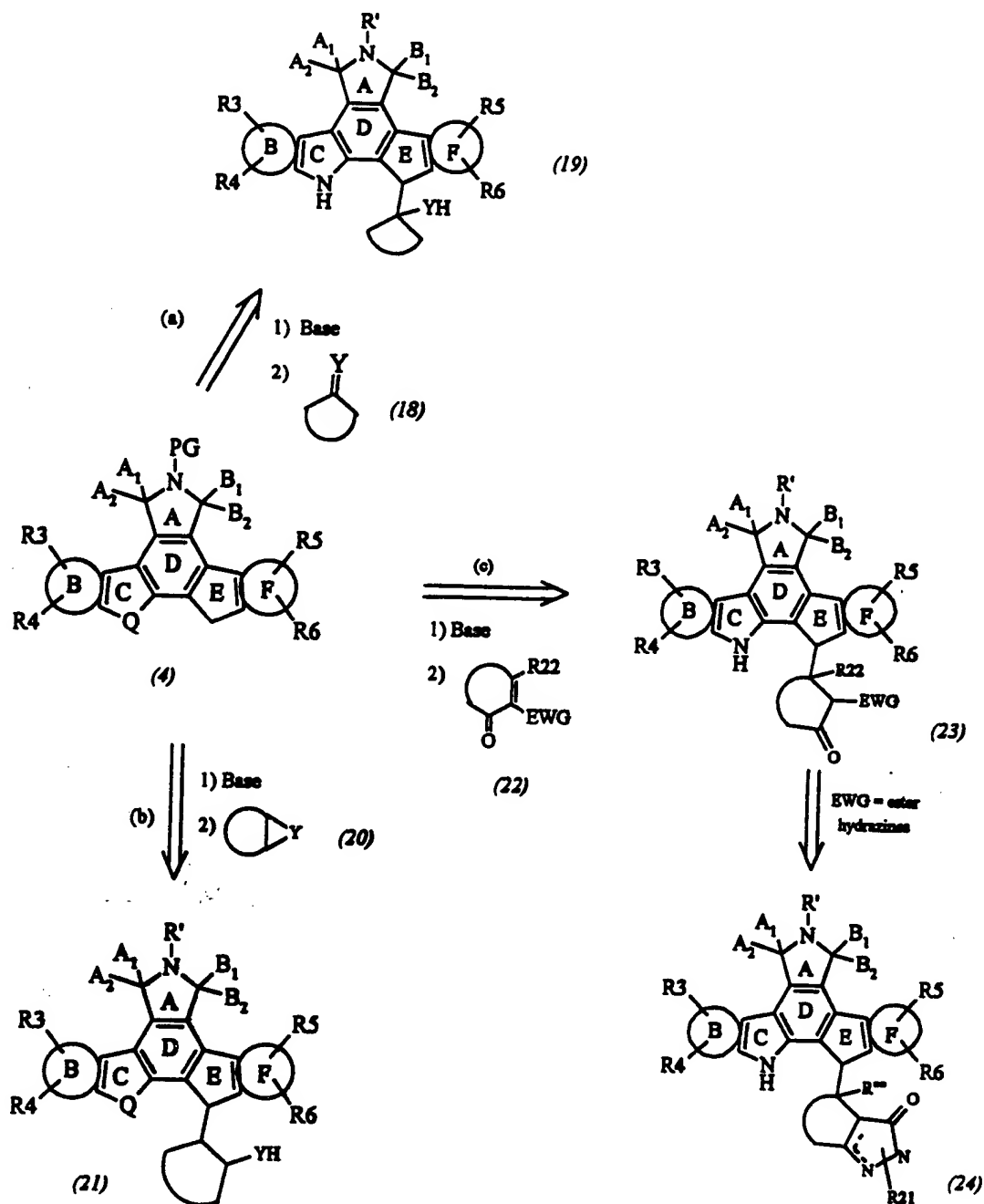
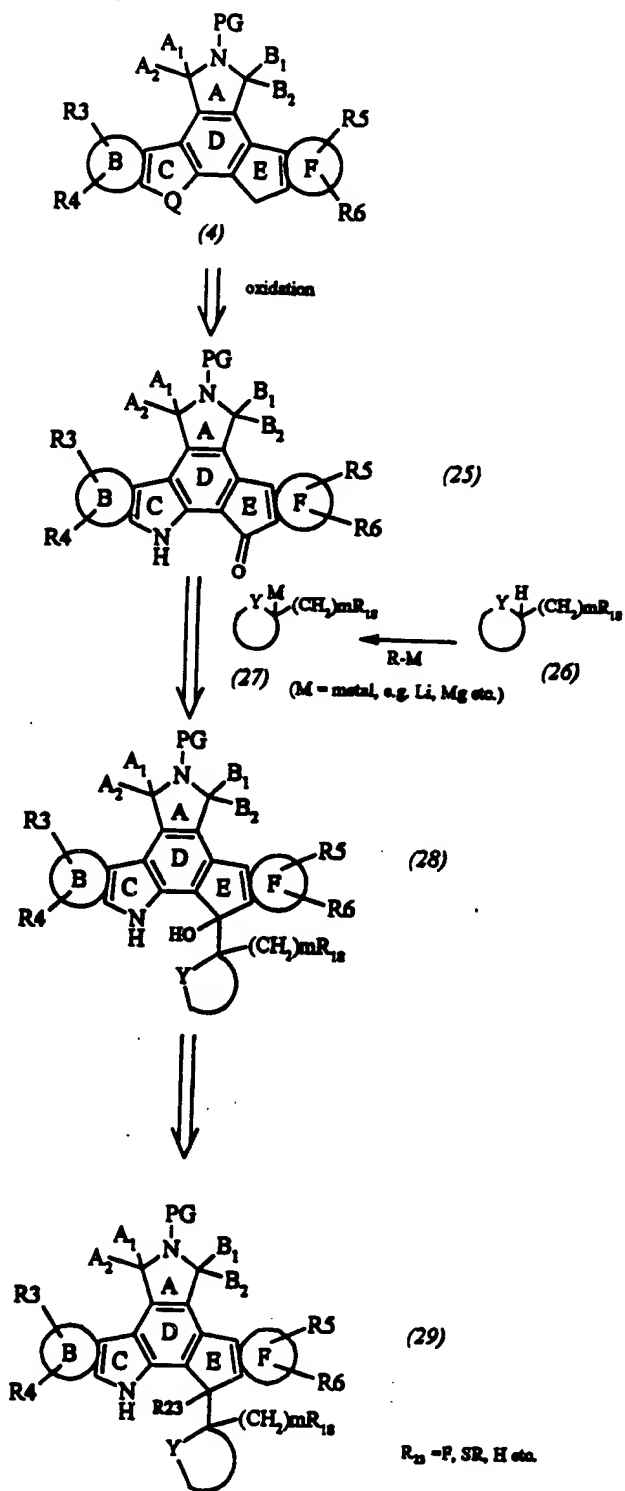


Figure 6.



The reaction scheme illustrates the synthesis of various porphyrin derivatives (35-38) from a common precursor (4). The precursor (4) is a porphyrin core with substituents R3, R4, R5, R6 at the meso positions and A1, A2, B1, B2 at the peripheral positions. The central nitrogen atom is substituted with a protecting group (PG).

Reaction (a) involves the reaction of (4) with a base (1) and a substituted pyrrole derivative (2), where R26 is a substituent on the pyrrole ring and R' is a group such as -COR'', -O-, or -OH. This leads to the formation of derivatives (35), (36), (31), (32), (33), and (34). These derivatives are characterized by the presence of a substituted pyrrole ring (R26) attached to the porphyrin core at the C2 position, with the nitrogen atom of the pyrrole ring substituted with R''.

Reaction (b) involves the reaction of (4) with a base (1) and a substituted pyrrole derivative (2), where R26 is a substituent on the pyrrole ring and R' is a group such as -COR'', -O-, or -OH. This leads to the formation of derivative (38), which is characterized by the presence of a substituted pyrrole ring (R26) attached to the porphyrin core at the C2 position, with the nitrogen atom of the pyrrole ring substituted with -OH.

Figure 8.

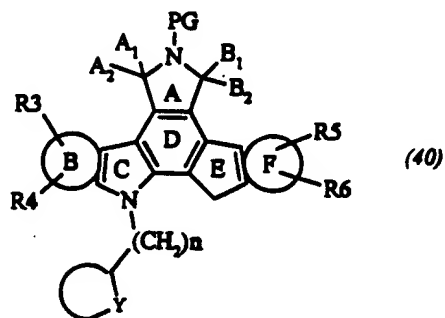
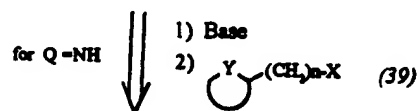
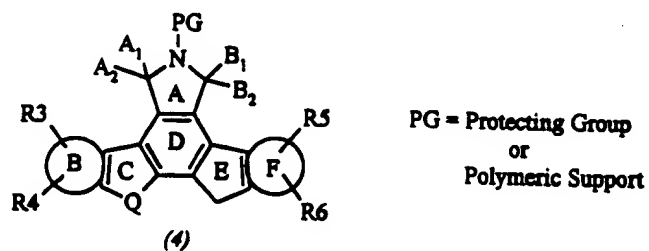


Figure 9.

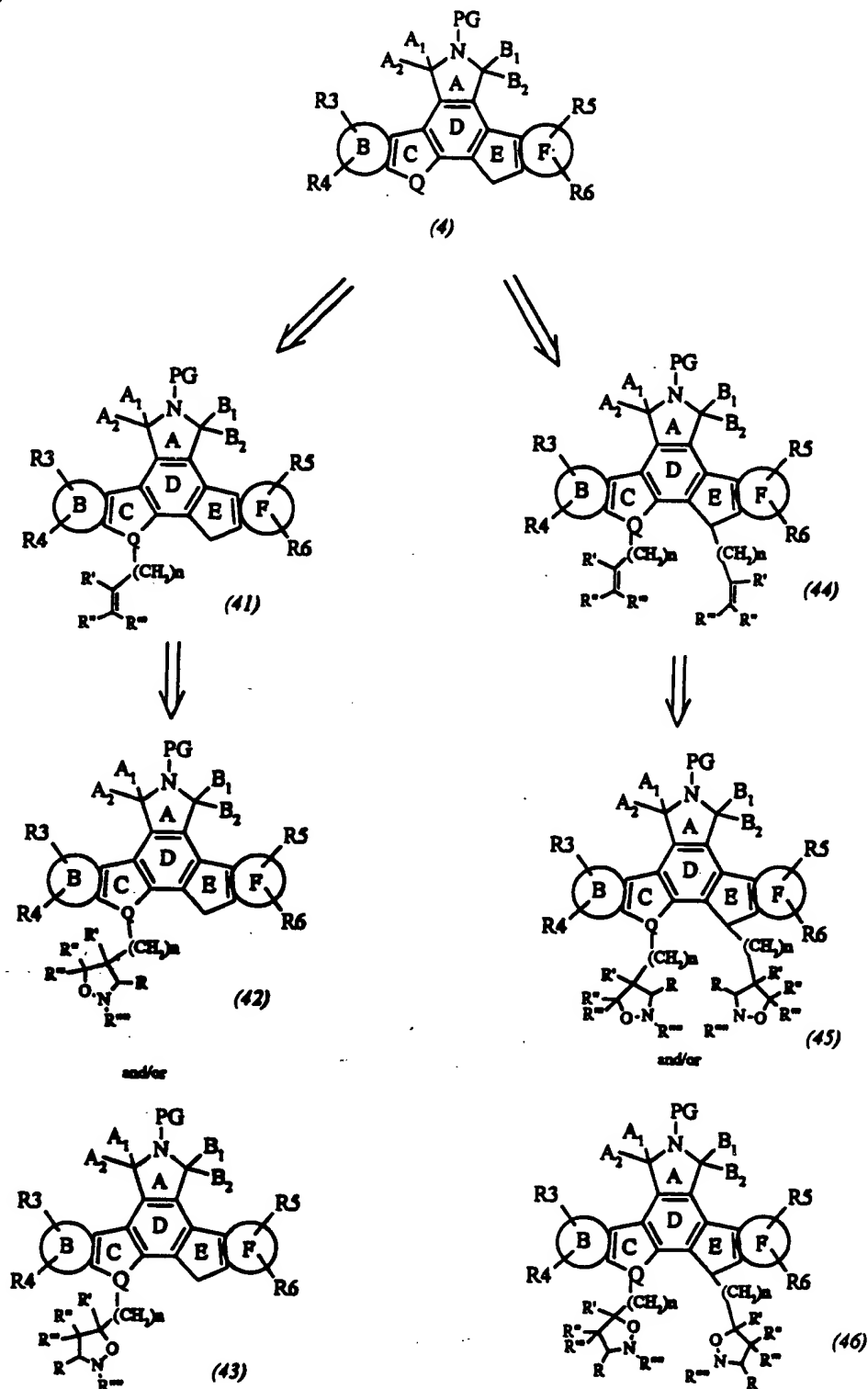
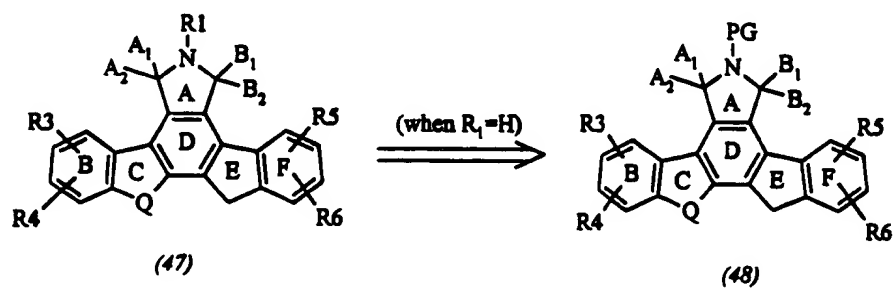


Figure 10.



PG = Protecting Group
 or
 Polymeric Support

Figure 11. Preparation of Soluble and Resin-bound N-lactam protected Fused Pyrrolocarbazoles (FP)

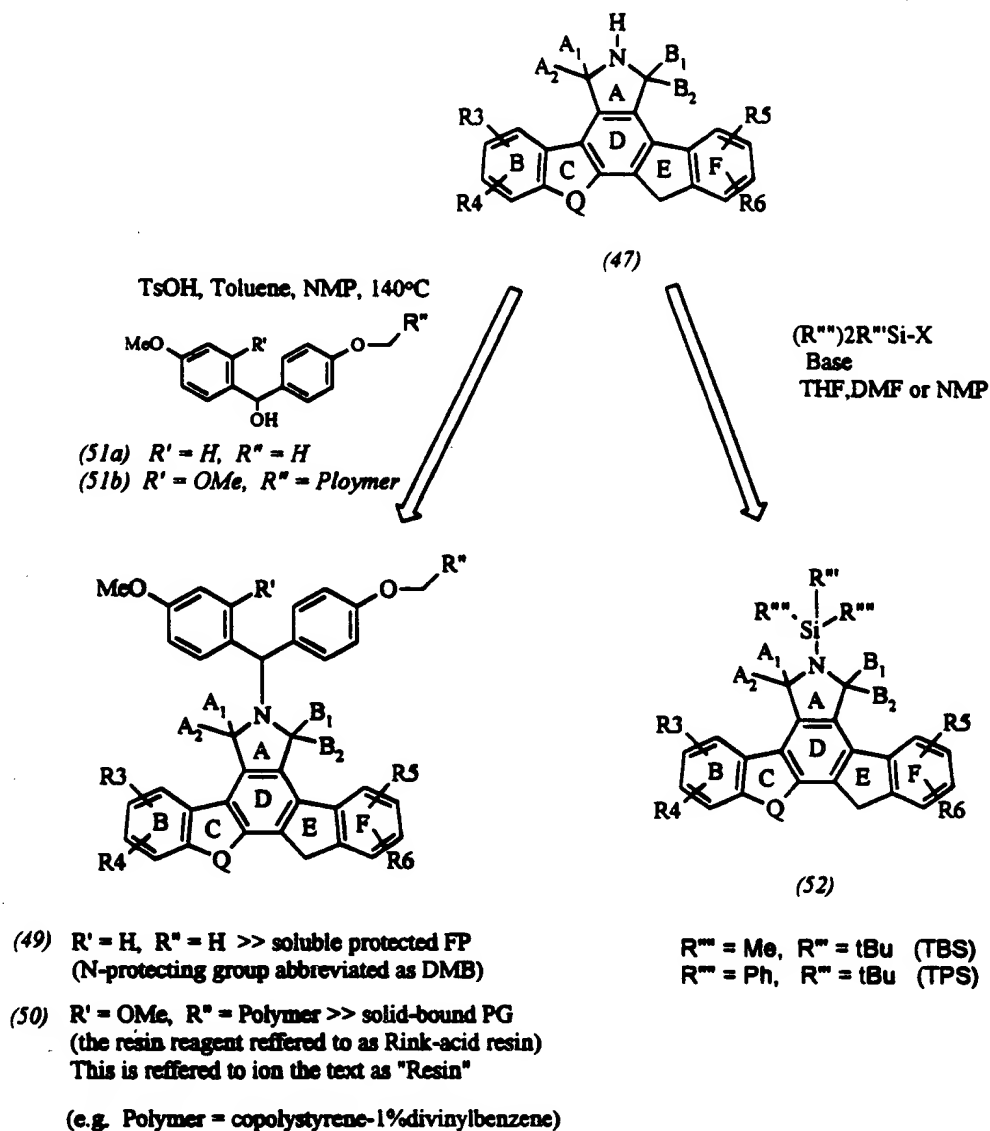


Figure 12.

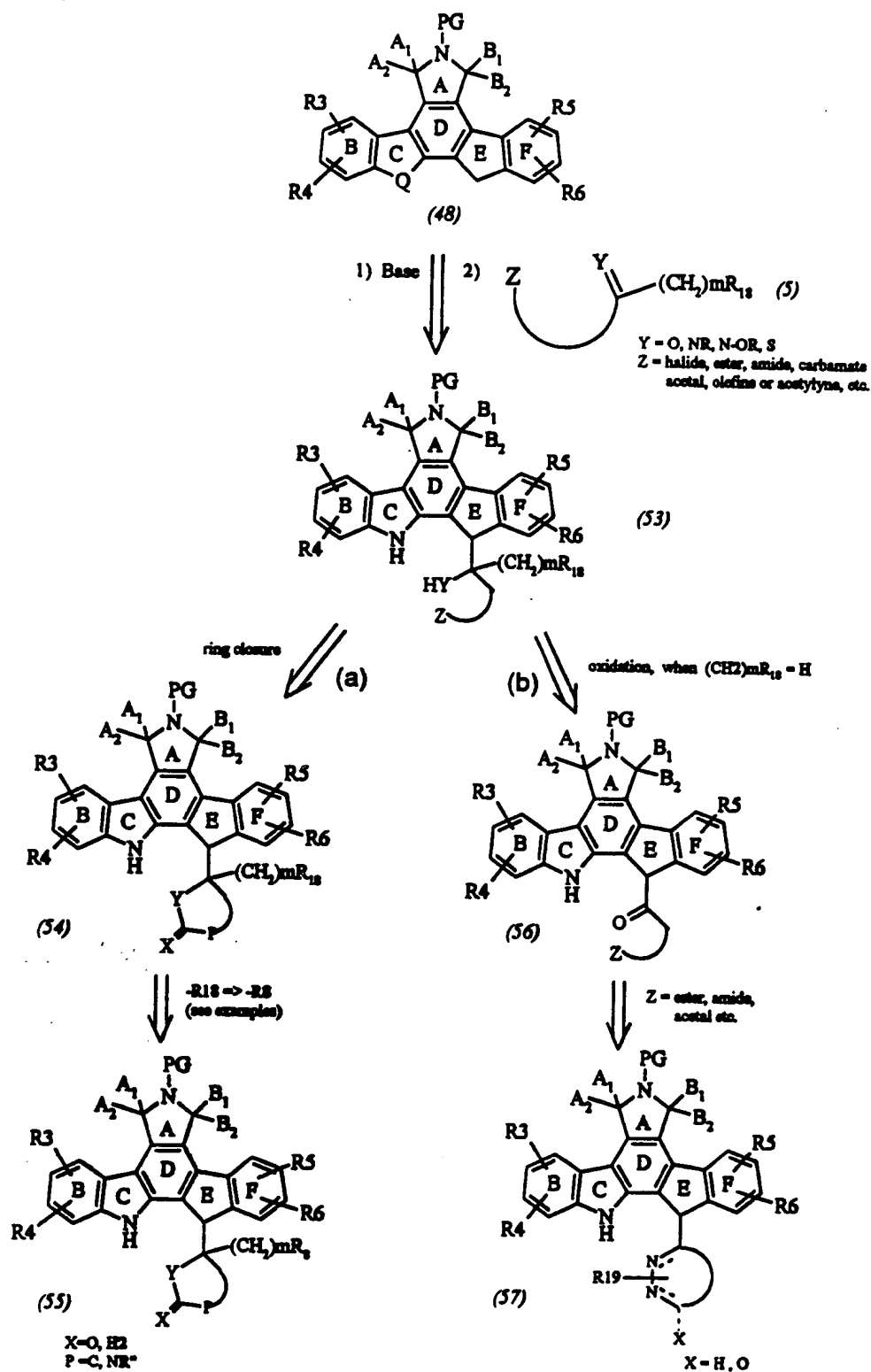


Figure 13. Preparation of Cyclic Substituents via Intra-molecular Dipolar Cycloaddition

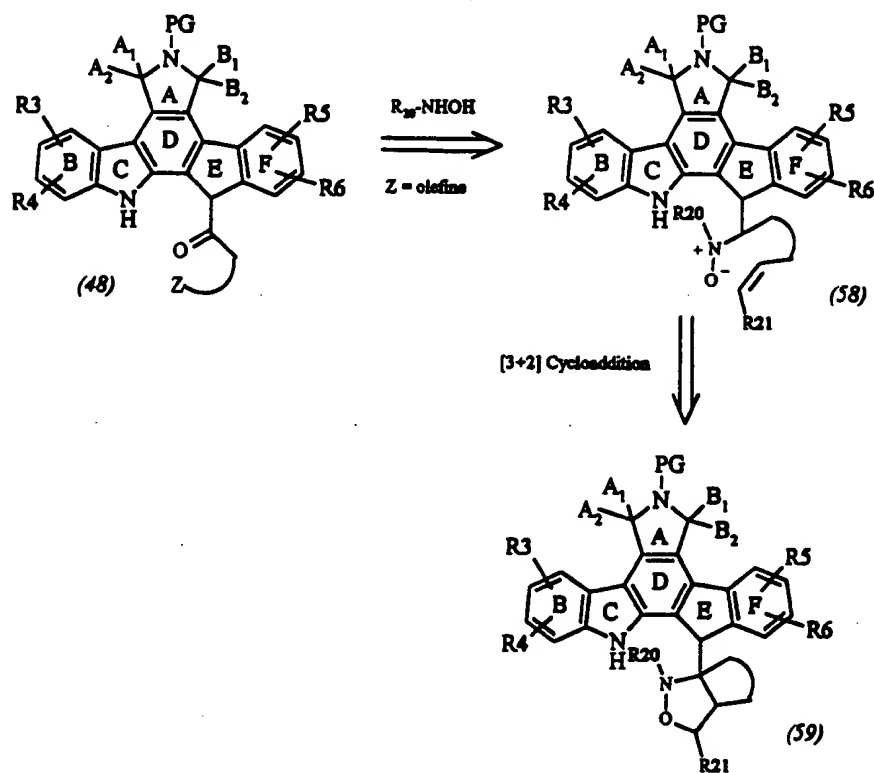


Figure 14. Preparation of Cyclic Substituents via Intra-molecular Dipolar Cycloaddition

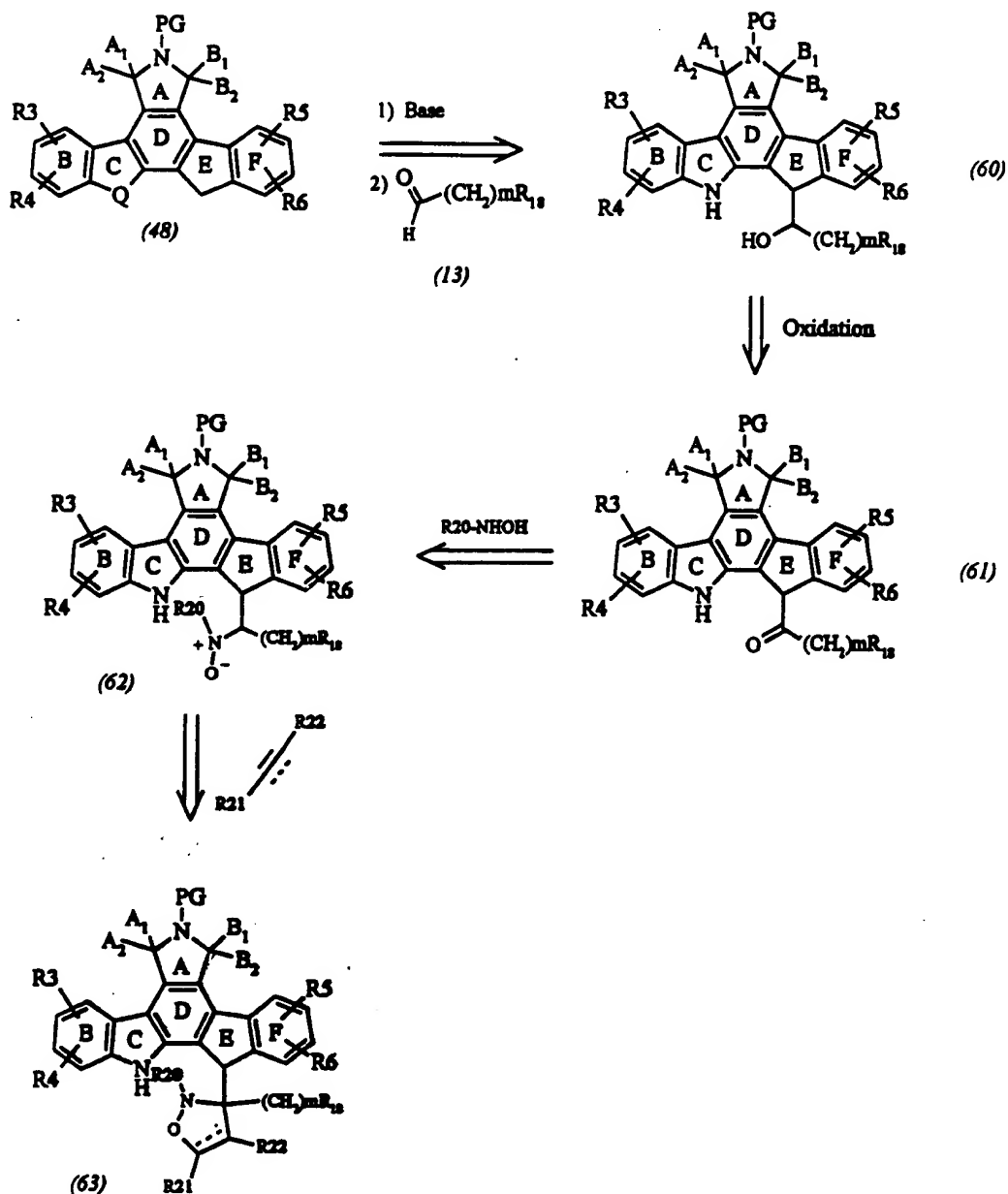


Figure 15.

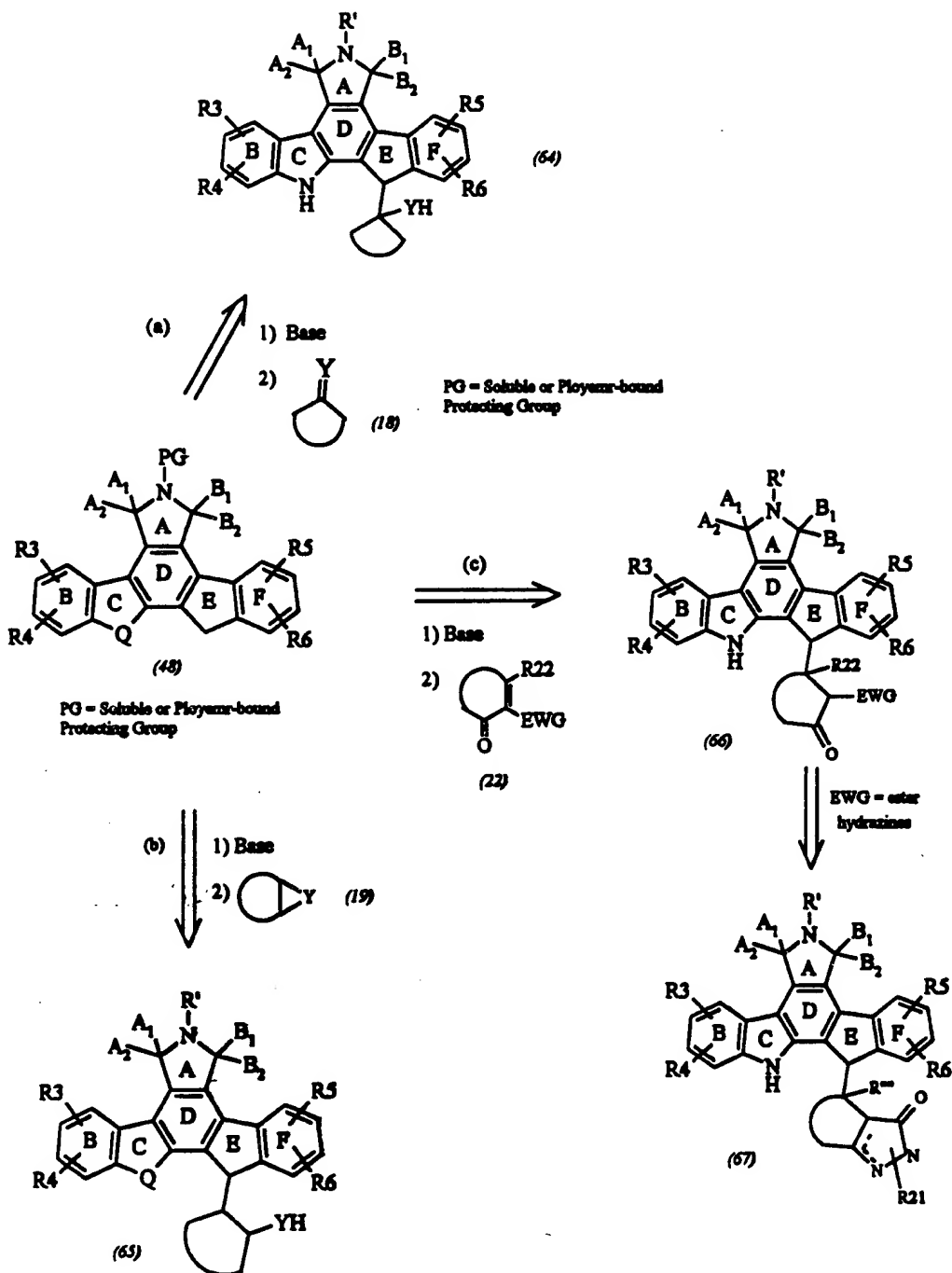


Figure 16.

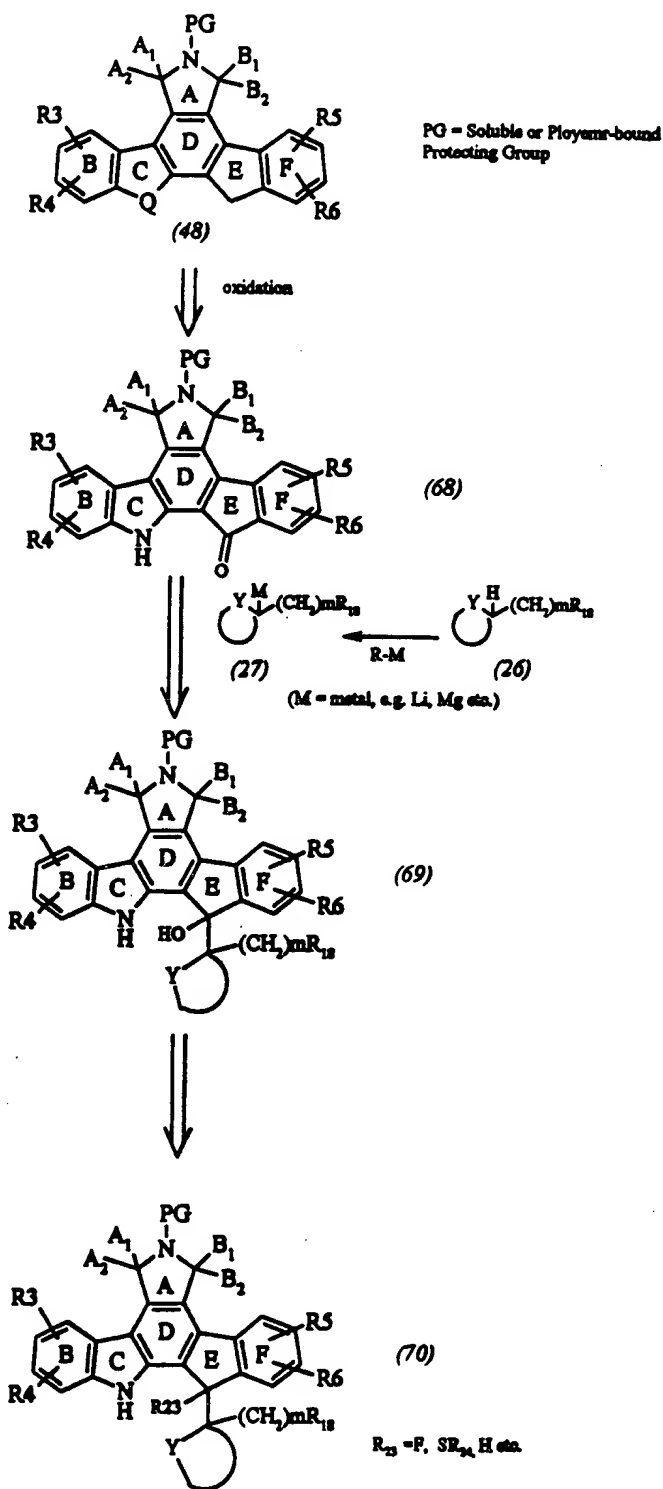


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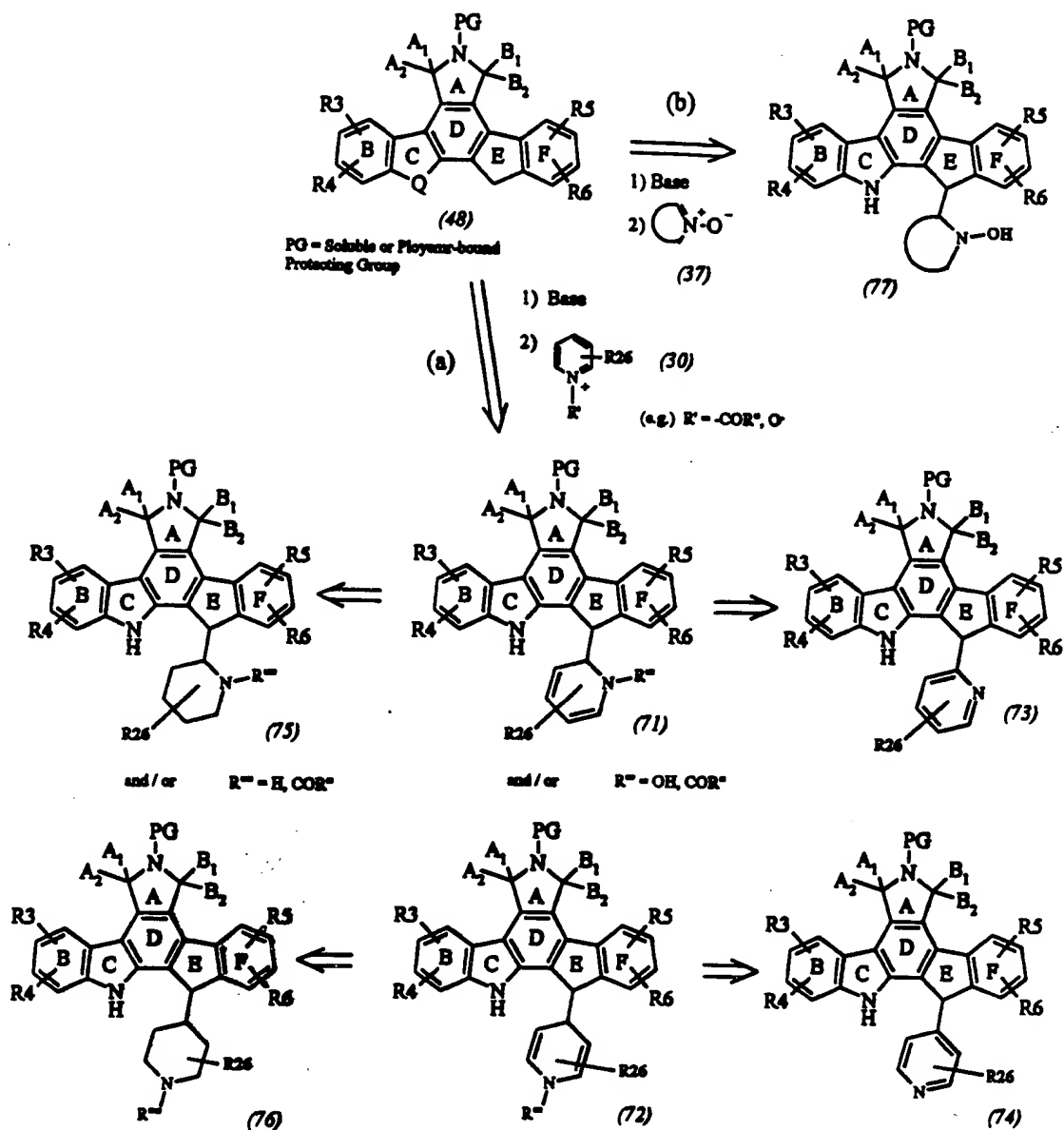


Figure 18.

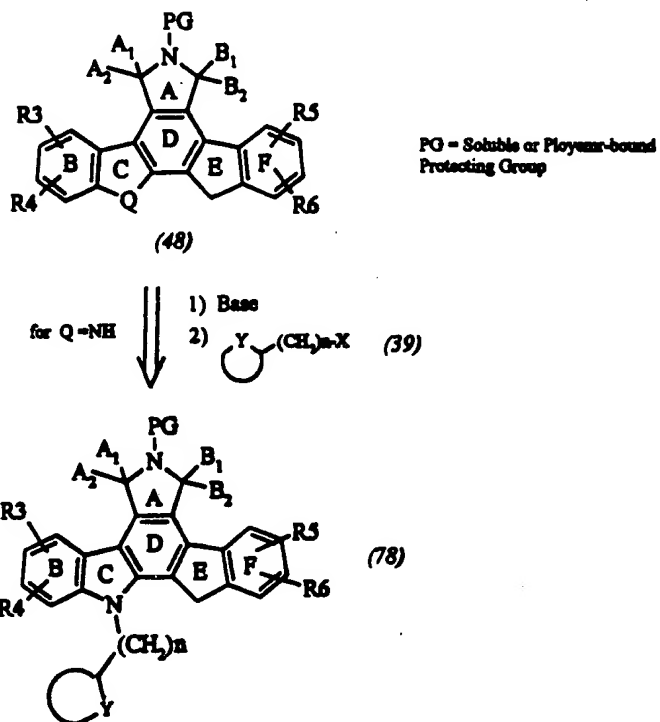


Figure 19.

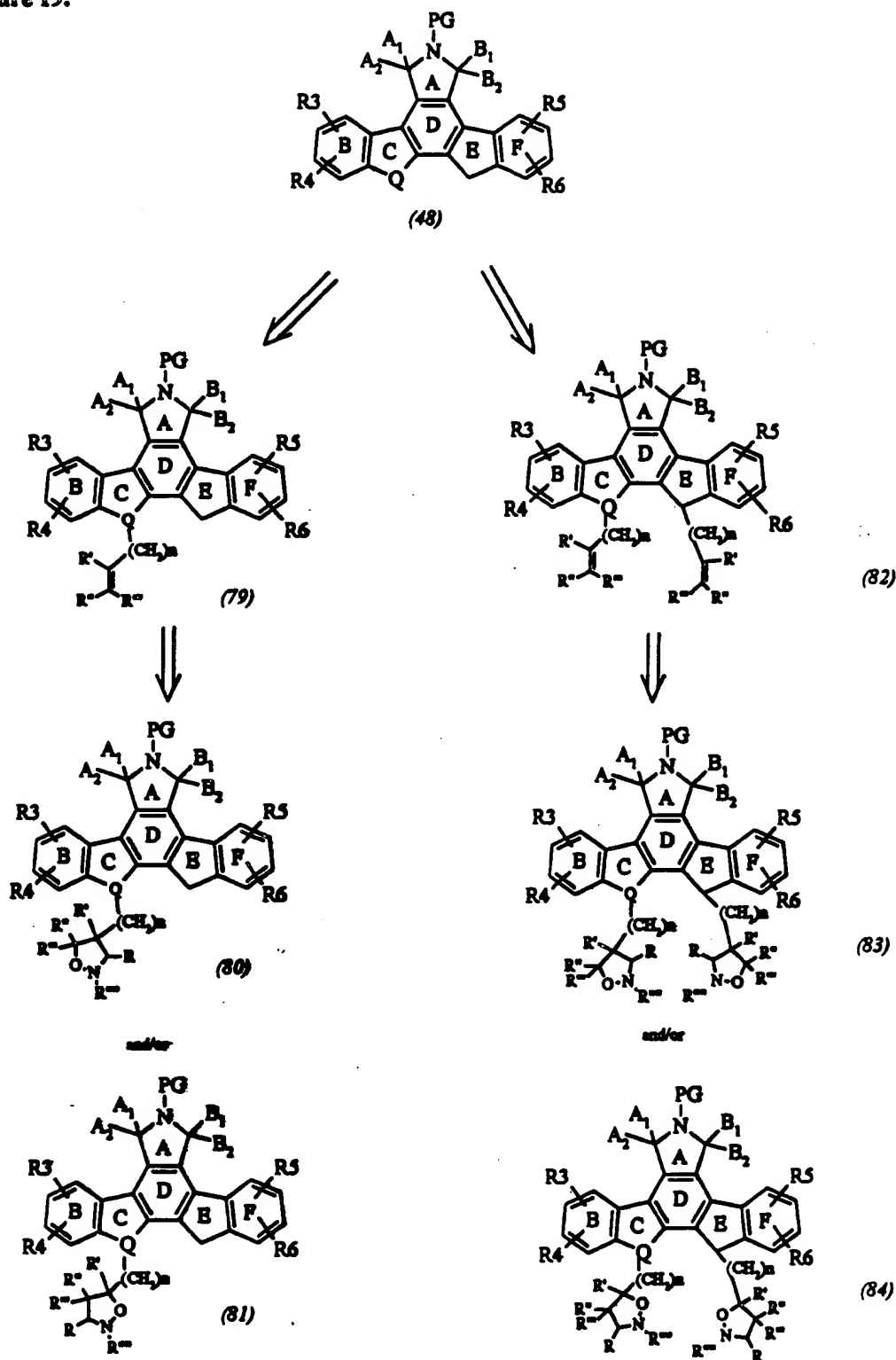


Figure 20.

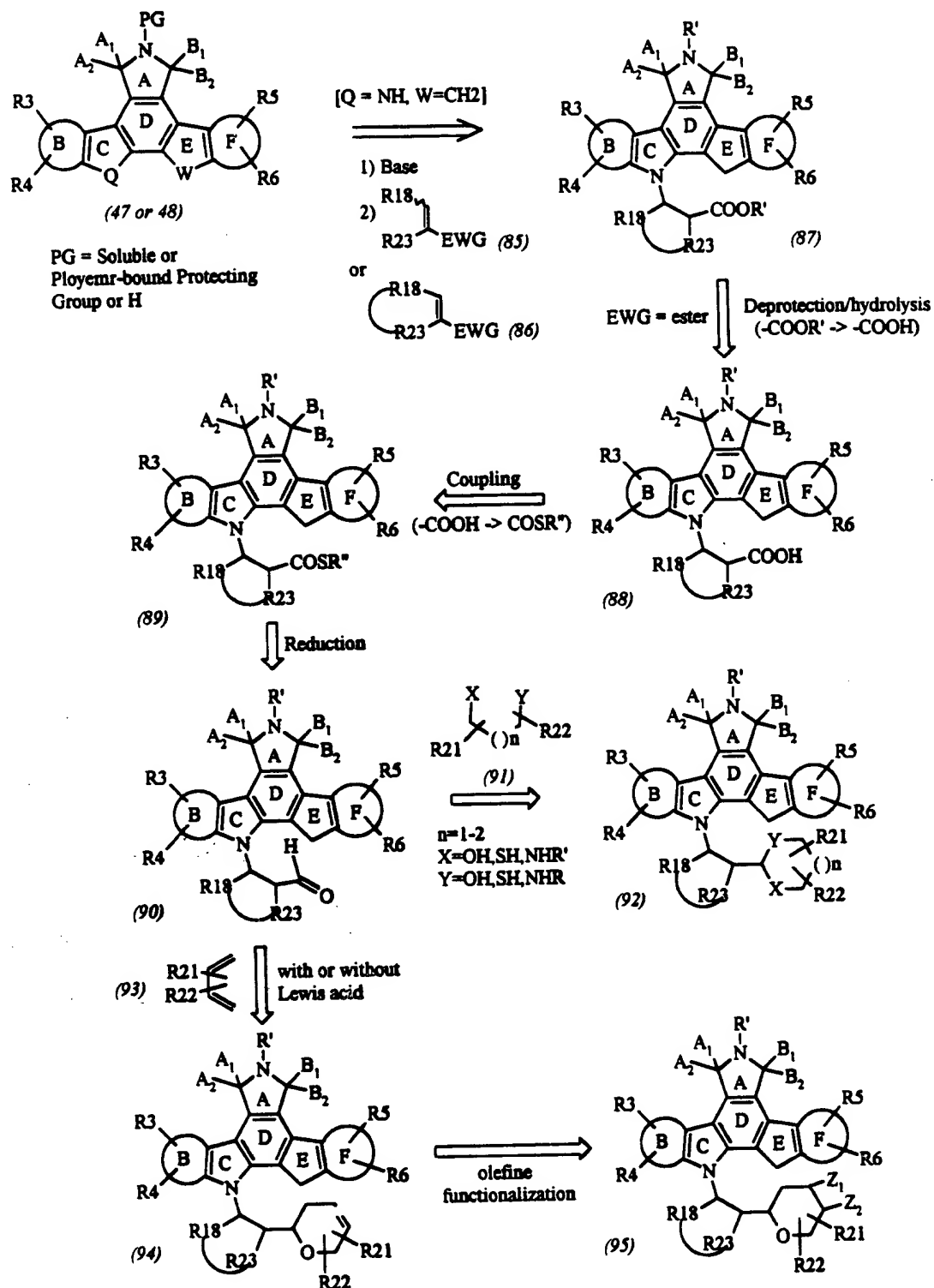


Figure 21.

